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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,497	09/02/2003	Dae-Hwan Kim	1349.1293	3058
21171	7590	06/01/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				PHAM, HAI CHI
		ART UNIT		PAPER NUMBER
		2861		

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/652,497	<b>Applicant(s)</b> KIM, DAE-HWAN
	<b>Examiner</b> Hai C. Pham	<b>Art Unit</b> 2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on \_\_\_\_.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213. .

## Disposition of Claims

4)  Claim(s) 1-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-17 is/are rejected.  
7)  Claim(s) 18 is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Objections***

3. Claim 16 is objected to because of the following informalities:
  - Line 1, "PVA" should read --Poly Vinyl Alcohol (PVA)--.Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3-5, 7-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (U.S. 5,877,844) in view of Miyagawa (U.S. Pub. No. U.S. 2003/0007068).

Matsumoto discloses in Fig. 1 an image exposure method and apparatus comprising a light source (14) to emit a light beam, a micro-polarized array (LCD panel 20) to receive the light beam, comprising a plurality of polarized cells arrayed along a predetermined direction (the LCD panel is defined as having a plurality of liquid crystal cells with corresponding polarized elements), a polarization direction adjuster (LCD panel moving section 26) to adjust transmission directions of each of the polarized cells according to image data, and lens (32) for focusing the polarized light beam on a recording medium (38).

Matsumoto fails to teach the detecting plate to transmit polarized elements of the received beam in a predetermined direction therethrough, the photoconductive drum (claim 1), and the light source emitting a plurality of light beams (claim 7).

Miyagawa discloses a polarization direction controlling system for controlling polarized elements of the light beam in an exposure device, which comprises the polarization direction controlling element (34) and a polarization separating element (36) to control the polarization direction of the light beam and prevent the polarization direction to change over time, wherein the polarization direction controlling element allows light beams of certain polarization direction to pass through. Miyagawa teaches the polarization direction controlling system being used in a printing system having a plurality of light emitting sources (array of light emitting elements) and a drum (14).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the polarization direction controlling system as taught by Miyagawa in the device of Koyama. The motivation for doing so would have been to prevent the polarization direction of the light beam to change over time as suggested by Miyagawa.

Matsumoto further teaches:

- The polarization directing adjuster includes a plurality of driving devices (28, 64) respectively connected to each of the polarized cells,
- The driving devices being piezoelectric sensors (piezoelectric elements 28 and 64) (Fig. 2),
- A polarization direction of the light beams received by the polarized cells is determined according to a tension applied from the polarization direction adjuster (the piezoelectric elements 28 and 64 applying tension on the LCD panel),
- A reflective member (light source reflector ) (Fig. 1).

6. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama in view of Miyagawa, as applied to claim 1 above, and further in view of Miyakawa et al. (U.S. 4,790,632).

Koyama, as modified, discloses all the basic limitations of the claimed invention including the disposition of the light source, the LCD panel, and the lens on a same plane and in parallel with each other, but except for the micro-lens array.

Miyakawa et al. discloses a liquid crystal device used in an image recording apparatus, which is provided with a micro-lens array whose individual lenses are aligned with the respective liquid crystal cells so as to improve the efficiency of focusing the light beam onto the photosensitive material.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a micro-lens array in the device of Koyama as taught by Miyakawa et al. The motivation for doing so would have been to improve the efficiency of focusing the light beam onto the photosensitive material as suggested by Miyakawa et al.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama in view of Miyagawa, as applied to claim 7 above, and further in view of Fuji et al. (U.S. 6,072,566).

Koyama, as modified, discloses all the basic limitations of the claimed invention except for the polarized cells being made of poly vinyl alcohol (PVA) doped with iodine.

However, it is well known in the art that the polarized cells of the liquid crystal display are commonly made of PVA doped with iodine as evidenced by Fuji et al. at col. 3, lines 4-14.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the LCD with the polarized cells being made of poly vinyl alcohol (PVA) doped with iodine in the device of Koyama as taught by Fuji et al. since Fuji et al. teaches this to be old and well known in the art to use such material.

***Allowable Subject Matter***

8. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the indication of the allowability of claim 18 is the inclusion therein, in combination as currently claimed, of the limitation "wherein the polarized cells are arranged in a main scanning direction of the apparatus and the light transmitted by the polarized cells is transmitted in a sub-scanning direction of the apparatus", which is not found taught by the prior art of record considered alone or in combination.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**HAI PHAM**  
**PRIMARY EXAMINER**  
May 28, 2005